

US EPA ARCHIVE DOCUMENT

**PREVENTION OF SIGNIFICANT DETERIORATION PERMIT  
FOR GREENHOUSE GAS EMISSIONS  
ISSUED PURSUANT TO THE REQUIREMENTS AT 40 CFR § 52.21**

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6**

**PSD PERMIT NUMBER:** PSD-TX-1310-GHG

**PERMITTEE:** Guadalupe Power Partners, L.P.  
717 Texas, Suite 1000  
Houston, TX 77002

**FACILITY NAME:** Guadalupe Generating Station

**FACILITY LOCATION:** 5740 Weil Road  
Marion, TX 78124

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. Section 7470, *et. Seq.*), and the Code of Federal Regulations (CFR) Title 40, Section 52.21, and the Federal Implementation Plan at 40 CFR § 52.2305 (effective May 1, 2011 and published at 76 FR 25178), the U.S. Environmental Protection Agency, Region 6 is issuing a *Prevention of Significant Deterioration* (PSD) permit to Guadalupe Power Partners, L.P. (GPP) for Greenhouse Gas (GHG) emissions. The Permit applies to the addition of two natural gas-fired simple-cycle combustion turbines, firewater pump engine, circuit breakers and fugitive emissions at the existing Guadalupe Generating Station (GGS) located in Marion, Texas.

GPP is authorized to construct two new natural gas-fired simple-cycle combustion turbines, firewater pump engine, circuit breakers and fugitive emissions as described herein, in accordance with the permit application (and plans submitted with the permit application), the federal PSD regulations at 40 CFR §52.21, and other terms and conditions set forth in this PSD permit in conjunction with the corresponding Texas Commission on Environmental Quality (TCEQ) permit No. PSDTX1310. Failure to comply with any condition or term set forth in this PSD Permit may result in enforcement action pursuant to Section 113 of the Clean Air Act (CAA). This PSD Permit does not relieve GPP of the responsibility to comply with any other applicable provisions of the CAA (including applicable implementing regulations in 40 CFR Parts 51, 52, 60, 61, 72 through 75, and 98) or other federal and state requirements (including the state PSD program that remains under approval at 40 CFR §52.2303).

In accordance with 40 CFR §124.15(b), this PSD Permit becomes effective 30 days after the service of notice of this final decision unless review is requested on the permit pursuant to 40 CFR §124.19.

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Wren Stenger, Director  
Multimedia Planning and Permitting Division

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Date

**Guadalupe Power Partners, L.P., Guadalupe Generating Station (PSD-TX-1310-GHG)  
Prevention of Significant Deterioration Permit  
For Greenhouse Gas Emissions  
Draft Permit Conditions**

**PROJECT DESCRIPTION**

GPP is proposing to add two (2) new natural gas-fired simple-cycle combustion turbines of 227 MW electric generating capability each to the 1,000 MW (nominal) existing major stationary source, Guadalupe Generating Station (GGS), located in Marion, Texas. The proposed project will provide peaking capacity at an existing natural gas fired combined cycle electric generating station. In addition, the project also includes the installation of a firewater pump engine, circuit breakers and associated fugitive natural gas emissions associated with the planned additions at their existing facility.

**EQUIPMENT LIST**

The following devices are subject to this GHG PSD permit.

FIN	EPN	Description
CTG-7 CTG-8	CTG-7 CTG-8	Two 227 (nominal net) MW Pipeline Quality Natural Gas-fired Simple-Cycle GE 7FA.05 Combustion Turbine Generator (CTG)
FWP-3	FWP-3	Ultra-low-sulfur diesel-fired fire water pump (300 hp, not to exceed) engine. In addition to emergency fire suppression activities, the unit is limited to 100 hrs of non-emergency operation on a 12-month rolling total basis for maintenance and testing. The unit may operate as needed to respond to emergency conditions.
SF6-1	SF6-1	Fugitive SF <sub>6</sub> emissions from Circuit Breakers
NG-1	NG-1	Fugitive Natural Gas emissions from various piping components

**I. GENERAL PERMIT CONDITIONS**

**A. PERMIT EXPIRATION**

As provided in 40 CFR §52.21(r), this PSD Permit shall become invalid if construction:

1. is not commenced (as defined in 40 CFR §52.21(b)(9)) within 18 months after the approval takes effect; or
2. is discontinued for a period of 18 months or more; or
3. is not completed within a reasonable time.

Pursuant to 40 CFR §52.21(r), EPA may extend the 18-month period upon a written satisfactory showing that an extension is justified.

## **B. PERMIT NOTIFICATION REQUIREMENTS**

Permittee shall notify EPA Region 6 in writing or by electronic mail of the:

1. date construction is commenced, postmarked within 30 days of such date;
2. actual date of initial startup, as defined in 40 CFR § 60.2, postmarked within 15 days of such date; and
3. date upon which initial performance tests will commence, in accordance with the provisions of Section V, postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the performance test protocol required pursuant to Condition V.B.

## **C. FACILITY OPERATION**

At all times, including periods of startup, shutdown, and maintenance, Permittee shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA, which may include, but is not limited to, monitoring results, review of operating maintenance procedures and inspection of the facility.

## **D. MALFUNCTION REPORTING**

1. Permittee shall notify EPA by mail, or other means identified by EPA, within 48 hours following the discovery of any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner, which results in an increase in GHG emissions above the allowable emission limits stated in Section II and III of this permit.
2. Within 10 days of the discovery of any GHG emissions above the allowable emission limits resulting from malfunctions as described in I.D.1., Permittee shall provide a written supplement to the initial notification that includes a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Section II and III, and the methods utilized to mitigate emissions and restore normal operations.
3. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

## **E. RIGHT OF ENTRY**

EPA authorized representatives, upon the presentation of credentials, shall be permitted:

1. to enter the premises where the facility is located or where any records are required to be kept

under the terms and conditions of this PSD Permit;

2. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD Permit;
3. to inspect any equipment, operation, or method subject to requirements in this PSD Permit; and,
4. to sample materials and emissions from the source(s).

#### **F. TRANSFER OF OWNERSHIP**

In the event of any changes in control or ownership of the facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. Permittee shall notify the succeeding owner and operator of the existence of the PSD Permit and its conditions by letter; a copy of the letter shall be forwarded to EPA Region 6 within thirty days of the letter signature.

#### **G. SEVERABILITY**

The provisions of this PSD Permit are severable, and, if any provision of the PSD Permit is held invalid, the remainder of this PSD Permit shall not be affected.

#### **H. ADHERENCE TO APPLICATION AND COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS**

Permittee shall construct this project in compliance with this PSD Permit, the application on which this permit is based, the TCEQ PSD Permit PSD-TX-1310 and all other applicable federal, state, and local air quality regulations. This PSD permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

## I. ACRONYMS AND ABBREVIATIONS

AVO	Auditory, Visual, and Olfactory
BACT	Best Available Control Technology
CAA	Clean Air Act
CCS	Carbon Capture and Sequestration
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
dscf	Dry Standard Cubic Foot
EF	Emission Factor
EPN	Emission Point Number
FIN	Facility Identification Number
FR	Federal Register
GCV	Gross Calorific Value
GHG	Greenhouse Gas
gr	Grains
GWP	Global Warming Potential
HHV	High Heating Value
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
MMBtu	Million British Thermal Units
MSS	Maintenance, Start-up and Shutdown
N <sub>2</sub> O	Nitrous Oxides
NSPS	New Source Performance Standards
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assurance and/or Quality Control
SCFH	Standard Cubic Feet per Hour
SF <sub>6</sub>	Sulfur hexafluoride
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TPY	Tons per Year
USC	United States Code

## II. Annual Emission Limits

**Table 1. Annual Emission Limit – GE 7FA.05 CT**

FIN	EPN	Description	GHG Mass Basis		TPY CO <sub>2</sub> e <sup>1,2</sup>	BACT Requirements
				TPY <sup>1</sup>		
CTG-7 CTG-8	CTG-7 CTG-8	Pipeline Quality Natural Gas Fired-Simple Cycle Turbine, combined	CO <sub>2</sub>	610,893.38	611,514.32	<ul style="list-style-type: none"> <li>- BACT limit of 1,293.3 lb CO<sub>2</sub>/MW-hr (gross) for each turbine on a 12-month rolling average basis.</li> <li>-MSS BACT limit of 20.8 tons CO<sub>2</sub>/hr for each turbine on a 12-month rolling average basis.</li> <li>-Both turbines combined shall not exceed 5,000 hours of operation (including MSS) on a 12-month rolling total basis.</li> <li>-Both turbines are limited to 300 combined hours of startup and 300 combined hours of shutdown on a 12-month rolling total basis.</li> <li>-See permit condition III.A.1 and 3</li> </ul>
			CH <sub>4</sub>	11.34		
			N <sub>2</sub> O	1.14		
FWP-3	FWP-3	Fire water Pump Engine	CO <sub>2</sub>	15.6	15.71	<ul style="list-style-type: none"> <li>- Not to exceed 100 hours of non-emergency operation on a 12-month rolling basis</li> <li>- Use of Good Combustion Practices. See permit condition III.B.</li> </ul>
			CH <sub>4</sub>	No Numerical Limit Established <sup>4</sup>		
			N <sub>2</sub> O	No Numerical Limit Established <sup>4</sup>		
SF6-1	SF6-1	Fugitive SF <sub>6</sub> Circuit Breaker Emissions	SF <sub>6</sub>	No Numerical Limit Established <sup>6</sup>	No Numerical Limit Established <sup>6</sup>	Work Practices. See permit condition III.C.
NG-1	NG-1	Components Fugitive Leak Emissions	CH <sub>4</sub>	No Numerical Limit Established <sup>6</sup>	No Numerical Limit Established <sup>6</sup>	Implementation of AVO Program. See permit condition III.D.
<b>Totals<sup>5</sup></b>			CO <sub>2</sub>	610,909.60	<b>611,655.16</b>	
			CH <sub>4</sub>	13.43		
			N <sub>2</sub> O	1.14		
			SF <sub>6</sub>	0.00345		



1. The TPY emission limits specified in this table are combined emission limits not to be exceeded for this facility and include emissions from the facility during all operations and include MSS activities.
2. Global Warming Potentials (GWP): CO<sub>2</sub>=1, CH<sub>4</sub> = 25, N<sub>2</sub>O = 298, SF<sub>6</sub>=22,800
3. The GHG Mass Basis TPY limit and the CO<sub>2</sub>e TPY limit for the natural gas fired simple cycle turbines applies to each turbine and is not a combined limit.
4. All values indicated as "No Numerical Limit Established" are less than 0.01 TPY with appropriate rounding (0.00063 tpy CH<sub>4</sub> and 0.00013 tpy N<sub>2</sub>O). The emission limit will be a design/work practice standard as specified in the permit.
5. Total emissions include the PTE for fugitive emissions. Totals are given for informational purposes only and do not constitute emission limits.
6. Fugitive Leak Emissions from SF6-1 and NG-1 are estimated to be 0.00345 TPY SF<sub>6</sub> and 78.7 TPY CO<sub>2</sub>e from SF6-1 and 2.03 TPY CH<sub>4</sub> and 50.9 TPY CO<sub>2</sub>e from NG-1. In lieu of an emission limit, the emissions will be limited by implementing a design/work practice standard as specified in the permit.

### III. SPECIAL PERMIT CONDITIONS

#### A. Requirements for the Pipeline Quality Natural Gas Fired-Simple Cycle Turbines (EPNs CTG-7 and CTG-8)

##### 1. BACT Emission Limits for EPNs CTG-6 and CTG-7:

**Table 2. BACT Emission Limits for Simple Cycle Turbines**

Turbine Model	Gross Heat Rate, combined <sup>1</sup> (MMBtu/yr)	Output Based Emission Limit, <sup>2</sup> (lb CO <sub>2</sub> /MWh, gross)	MSS Emission BACT Limit, Combined <sup>3</sup> (tons CO <sub>2</sub> /hr)
GE 7FA.05 (EPN CTG-7)	10,279,456	1293.3	20.8
GE 7FA.05 (EPN CTG-8)		1293.3	20.8

1. The gross heat rate emission limit is combined for the two combustion turbines on a 12-month rolling basis.
2. The output based emission limit is for each turbine on a 12-month rolling average. The combined turbines are limited to 5,000 operational hours combined including MSS.
3. The MSS emission BACT limit is for each turbine on a 12-month rolling average. The combined turbines are limited to 300 hours combined of startup and 300 hours combined of shutdown on a 12-month rolling total basis.
  - a. The BACT limit of 1,293.3 lbs of CO<sub>2</sub>/MWh gross output applies to each combustion turbine. The Permittee shall determine the hourly CO<sub>2</sub> emission rate for each turbine from 40 CFR Part 75, Appendix G or the CO<sub>2</sub> emissions CEMS data 40 CFR Part 75, Appendix F. The Permittee shall document each day a combustion turbine operates, the calculation of CO<sub>2</sub> emissions and the corresponding hours of operation and the measured gross electrical output of the combustion turbine. To determine the BACT limit, the calculated CO<sub>2</sub> emissions from each combustion turbine is divided by the gross electrical output over the same period for comparison to the limit for each combustion turbine. The lb CO<sub>2</sub>/MWh BACT limit does not include periods of startup and shutdown.
  - b. The permittee shall calculate, on a daily basis, the amount of CO<sub>2</sub>e (including emissions during startup and shutdown) emitted from each turbine in tons per year based on the procedures and Global Warming Potentials (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1, for CH<sub>4</sub> and N<sub>2</sub>O. Compliance shall be based on a 12-month rolling total basis rolling basis.



- c. Upon initial demonstration that the CTGs comply with the emissions limit via emission tests, the combined gross heat rate of the fuel used by each turbine (EPNs CTG-7 and CGT-8) shall not exceed 10,279,456 MMBtu (HHV) on a 12-month rolling total basis. The permittee shall calculate each day a combustion turbine operates, the quantity of fuel used by each turbine over the previous 12-month basis by multiplying the gross calorific value of the fuel combusted by the volume of fuel metered for comparison to the annual fuel limit for each combustion turbine.
- d. Both CTGs (EPNs CGT-7 and CGT-8) are limited to 5,000 operational hours combined on a 12-month rolling basis which does include periods of startup and shutdown. The Permittee shall record the amount of operational time for each combustion turbine. The amount of operational time for each combustion turbine shall be summed and combined with the other CTG to compare the combined summed result to the combined 5,000 operational hour per year limit (including MSS events).

## 2. Turbine Work Practice and Operational Requirements:

- a. The Permittee shall determine the pounds of CO<sub>2</sub> emitted hourly from each turbine using equation G-4 of 40 CFR Part 75, Appendix G and the hourly average heat input rate using the heat input calculation procedures contained in 40 CFR Part 75, Appendix F, equation F-20. The CO<sub>2</sub> emission factor used in the Appendix G calculation procedure may be the generic factor provided in equation G-4 or a factor based on fuel composition and GCV measurements according to 40 CFR Part 75, Appendix F, equation F-7b.
- b. Permittee shall calculate the CH<sub>4</sub> and N<sub>2</sub>O emissions each day on a 12-month rolling average. Permittee shall determine compliance with the CH<sub>4</sub> and N<sub>2</sub>O emissions limits contained in Section II using the default CH<sub>4</sub> and N<sub>2</sub>O emission factors contained in Table C-2 of 40 CFR Part 98 and the measured actual hourly heat input (HHV).
- c. The Permittee shall calculate the CO<sub>2e</sub> emissions on a 12-month rolling total, based on the procedures and Global Warming Potentials (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1.
- d. The Permittee shall install, calibrate, and operate a fuel flow meter and perform periodic scheduled GCV fuel sampling for each combustion turbine and shall meet the applicable requirements, including certification testing, of 40 CFR Part 75, Appendix D and 40 CFR Part 60 to be used in conjunction with the Fc factor based on the procedures to calculate the CO<sub>2</sub> emission rate in 40 CFR Part 75, Appendix F.
- e. For each turbine, fuel metering shall include:
  - i. Measurement and recording of the natural gas flow rate using an operational non-resettable elapsed flow meter installed at each turbine inlet, or natural gas flow meter which meets the requirements of 40 CFR Part 75, Appendix D.
  - ii. Recording the total amount of fuel combusted for each turbine on an hourly basis, and
  - iii. The fuel gross calorific value (GCV), high heat value (HHV), carbon content, and, if applicable, molecular weight of the fuels shall be determined monthly according to the procedures contained in 40 CFR § 98.34(b)(3). Records of the fuel GCV shall be maintained for a minimum period of five years. Upon request, the Permittee shall provide a sample and/or analysis of the fuel that is fired in any unit covered by this permit at the time of the request, or shall allow a sample to be taken by EPA for analysis.
- f. The Permittee shall calibrate and perform preventative maintenance checks of the fuel gas flow

meters and document annually.

- g. Permittee shall measure and record the gross energy output (MWh (gross)) on an hourly basis.
- h. On or before the date of initial performance test required by 40 CFR 60.8, and thereafter, Permittee shall install, and continuously operate, and maintain the combustion turbines so emission are at or below the emissions limits specified in this permit.
- i. The Permittee shall substitute data per the Missing Data Substitution Procedures specified under 40 CFR Part 75, Subpart D.
- j. As an alternative to Special Condition III.A.3.a, the Permittee may install a CO<sub>2</sub> CEMS and volumetric stack gas flow monitoring system with an automated data acquisition and handling system for measuring and recording CO<sub>2</sub> emissions discharged to the atmosphere.
- k. If 40 CFR § 75.13(c) is used to determine CO<sub>2</sub> emissions, for each turbine, a O<sub>2</sub> CEMS and volumetric stack gas flow monitoring system with an automated data acquisition and handling system for measuring and recording CO<sub>2</sub> emissions discharged to the atmosphere shall be installed and operated for all operating hours, including startup and shutdown. The measurement of CO<sub>2</sub> shall be used to show compliance with the emission limit in Table 1.
- l. The Permittee shall ensure that all required CO<sub>2</sub> monitoring system/equipment are installed and all certification tests are completed on or before the earlier of 90 unit operating days or 180 calendar days after the date the unit commences operation.
- m. The Permittee shall maintain the following records for at least five years from the date or origin:
  - i. One-hour measured CO<sub>2</sub> emission averages
  - ii. The results of all calibration and linearity checks.
  - iii. RATA test plans and reports of test results, as applicable.
- n. Ensure compliance with the specifications and test procedures for a CO<sub>2</sub> emission measurement system at stationary sources in 40 CFR Part 75, or 40 CFR Part 60, Appendix B, Performance Specification numbers 1 through 9, as applicable.

### 3. Startup and Shutdown Requirements for Turbines:

- a. Permittee shall minimize emissions during startup and shutdown activities by operating and maintaining the facility and associated air pollution control equipment in accordance with good air pollution control practices, safe operating practices, and protection of the facility.
  - i. A startup event is defined as the period that begins when fuel flow is initiated in the CT as indicated by flame detection and ends when the CT load reaches 60%.
  - ii. A shutdown event is defined as the time period that begins when the CT drops out of the normal operating low-NO<sub>x</sub> combustion mode (which is equated to approximately 60% CT load) following an instruction to shut down, and ends when flame is no longer detected in the CT combustors. A shutdown event will also end if the CT is instructed to return to a load greater than 60% and resumes normal operation.
  - iii. Startup activities are limited to 300 combined hours on a 12-month rolling total basis and shutdown activities are limited to 300 combined hours on a 12-month rolling total basis. The Permittee shall record the amount of MSS time for each combustion turbine. The amount of MSS time for each combustion turbine shall be summed and combined with the other CTG MSS time to compare the combined summed result to the combined MSS hour per year limit.
- b. Each CT shall not exceed the MSS BACT limit of 20.8 ton CO<sub>2</sub>/hr on a 12-month rolling

average basis. The Permittee shall document for each MSS event, the daily calculation of CO<sub>2</sub> emissions and the corresponding time duration of the event for each combustion turbine. To determine the BACT limit, the calculated MSS CO<sub>2</sub> emissions from each combustion turbine is summed and divided by the summed time duration over the same period on a 12-month rolling average basis. Startup and shutdown emissions shall not exceed the BACT emission limits in Table 1.

- c. The Permittee must record the time, date, fuel heat input (HHV) in MMBtu/hr, and duration of each startup and shutdown event in order to calculate the total CO<sub>2</sub>e emissions. The records must include hourly CO<sub>2</sub> emission levels as measured by the fuel flow meter and/or O<sub>2</sub> emission monitor (or CO<sub>2</sub> CEMS with volumetric stack gas flowrate) and the calculations based on the actual heat input for the CO<sub>2</sub>, CO<sub>2</sub>e, O<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> emissions during each startup and shutdown event based on the equations represented in the permit application. These records must be kept for five years following the date of such event.

## **B. Requirements for the Firewater Pump Engine (EPN: FWP-3)**

- 1. Fuel Specification:** The fuel for the firewater pump is limited to ultra-low sulfur diesel (ULSD) fuel.

### **2. Firewater Pump Work Practice and Operational Requirements:**

- a. The firewater pump shall not exceed 100 hours of non-emergency operation on a 12-month rolling basis and shall be operated and maintained in accordance with the manufacturer's recommendations.
- b. The permittee shall install and maintain an operational non-resettable elapse time meter for the firewater pump.
- c. The permittee shall install and maintain a non-resettable elapsed fuel flow meter.
- d. The engine shall meet the requirements of 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Combustion Ignition Combustion Engines.
- e. The emergency firewater pump engine purchased will be certified to meet the applicable emission standards of 40 CFR 60.4205(c).
- f. The permittee shall calculate, on a monthly basis, the amount of CO<sub>2</sub>e from the firewater pump in tons per year on a 12-month rolling total basis based on the procedures and Global Warming Potentials (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1, for CH<sub>4</sub> and N<sub>2</sub>O and in accordance with 40 CFR § 98.33(a)(1)(i) for CO<sub>2</sub> emission calculations.

## **C. Requirements for the Fugitive SF<sub>6</sub> Circuit Breaker (EPN: SF6-1)**

### **Fugitive SF<sub>6</sub> Circuit Breaker Work Practice and Operation Requirements:**

- 1. For EPN SF6-1, SF<sub>6</sub> emissions shall be calculated annually (calendar year) in accordance with the mass balance approach provided in equation DD-1 of the Mandatory Greenhouse Gas Reporting Rule for Electrical Transmission and Distribution Equipment Use, 40 CFR Part 98, Subpart DD. The total SF<sub>6</sub> inventory of the circuit breakers shall not exceed 1,380 lb of SF<sub>6</sub> with leak detection.

2. The circuit breakers shall be equipped with a low pressure alarm and low pressure lockout.

#### **D. Requirements for the Components Fugitive Leaks (EPN: NG-1)**

##### **Components Fugitive Leaks Work Practice and Operation Requirements:**

1. The Permittee shall implement an auditory/visual/olfactory (AVO) monitoring program for detecting leaking in natural gas piping components, including valves and flanges.
2. AVO monitoring shall be performed daily.
3. Any component found to be leaking during remote sensing or AVO monitoring shall be repaired within 15 days.
4. Records of the daily AVO monitoring results shall be maintained on site.

#### **IV. Recordkeeping and Reporting**

##### **A. Records**

1. In order to demonstrate compliance with the GHG emission limits in Table 1, the permittee shall monitor the following parameters and summarize the data as specified in Special Conditions III. A, B, C and D.
  - a. Operating hours for all air emission sources authorized by this permit;
  - b. Records of run time meter measurements for the fire pump engine;
  - c. Records of the fuel consumed by each source authorized by this permit. The fuel usage for all turbines using continuous fuel flow monitors (a group of equipment can utilize a common fuel flow meter, as long as actual fuel usage is allocated to the individual equipment based upon actual operating hours and maximum firing rate). A computer that collects, sums, and stores electronic data from continuous fuel flow meters is an acceptable totalizer;
  - d. Semi-annual fuel sampling for natural gas or other frequencies as allowed by 40 CFR Part 98 Subpart C §98.34(b)(3).
2. Permittee shall maintain records of the following for GHG emissions from the Equipment List: all records or reports pertaining to significant maintenance performed impacting GHG emissions; duration of startup, shutdown; the initial startup period for the emission units; malfunctions; all records relating to performance tests, calibrations, checks, and monitoring of combustion equipment; duration of an inoperative monitoring device required by this permit and emission units with the required corresponding emission data; and all other information required by this permit recorded in a permanent form suitable for inspection. These records may be maintained in electronic databases. The records shall be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.
3. Permittee shall maintain records of all GHG emission units and CO<sub>2</sub> emission certification tests and monitoring and compliance information required by this permit.
4. Permittee shall maintain reports and documents pertaining to the maintenance performed and compliance with the Monitoring and Quality Assurance and Quality Control (QA/QC) procedures outlined in 40 CFR 98.304 for SF<sub>6</sub> circuit breakers.
5. Permittee shall maintain records and submit a written report of all excess emissions to EPA semi-annually, except when: more frequent reporting is specifically required by an applicable



subpart; or the Administrator or authorized representative, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The report is due on the 30<sup>th</sup> day following the end of each semi-annual period and shall include the following:

- a. Time intervals, date and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;
  - b. Time and date of each period during which the monitoring equipment was inoperative (monitoring down-time);
  - c. If there has been no excess emissions or monitoring downtime during the reporting period, a statement to that effect;
  - d. Any failure to conduct any required source testing, monitoring, or other compliance activities; and
  - e. Any violation of limitations on operation, including but not limited to restrictions on hours of operation of the fire pump.
6. Excess emissions shall be defined as any period in which the facility emissions exceed a maximum emission limit set forth in this permit, a malfunction occurs if an emission unit listed in the Equipment List that results in excess GHG emissions, or any other unauthorized GHG emissions occur.
  7. Excess emissions indicated by GHG emission source certification testing or compliance monitoring shall be considered violations of the applicable emission limit for the purpose of this permit.
  8. Instruments and monitoring systems required by this PSD permit shall have a 95% on-stream time on an annual basis.
  9. All records required by this PSD Permit shall be retained for not less than 5 years following the date of such measurements, maintenance, and reporting.

#### **V. Shakedown Period**

The combustion turbine emission limits and requirements in conditions II, III.A.1., and III.B. shall not apply during combustion shakedown periods. Shakedown is defined as the period beginning with initial startup and ending no later than initial performance testing, during which the Permittee conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. The shakedown period shall not exceed the time period for performance testing as specified in 40 CFR § 60.8. The requirements of special condition I.C. of this permit shall apply at all times.

#### **VI. Initial Performance Testing Requirements:**

- A. The Permittee shall perform stack sampling and other testing to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from each of the two turbines (EPN CTG-7 and CTG-8) and to determine the initial compliance with the CO<sub>2</sub> emission limits established in this permit. Sampling shall be conducted in accordance with 40 CFR § 60.8 and EPA Method 3a or 3b for the concentration of CO<sub>2</sub>.

The stack test shall consist of three separate runs at or above 90% of maximum load operations and three separate runs below 70% but above 60% load operation. Stack gas flow rate measurements, as

well as moisture measurements (if needed), shall be made during each test run. The electrical generation (gross megawatts) during each test run shall also be recorded. The CO<sub>2</sub> emission rate shall be calculated as defined below and recorded for each test run in lb CO<sub>2</sub>/MWh (gross) and lb CO<sub>2</sub>/hr. The arithmetic mean for the three test runs at or above 90% of maximum load operation and the arithmetic mean for the three test runs below 70% but above 60% load operation shall also be calculated and recorded.

1. The CO<sub>2</sub> hourly average emission rate determined by the three runs at or above 90% of maximum load multiplied by 2,500 hours for each combustion turbine. The two CT are summed to determine the combined emission rate for 5,000 combined hours of operation.
  2. If the above calculated CO<sub>2</sub> emission total does not exceed the (TPY) specified on Table 1, no compliance strategy needs to be developed.
  3. If the above calculated CO<sub>2</sub> emission total exceeds the (TPY) specified in Table 1, the facility shall:
    - a. Document the exceedance in the test report; and
    - b. Explain within the report how the facility will assure compliance with the CO<sub>2</sub> emission limit listed in Table 1.
- B.** Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility, performance tests(s) shall be conducted and a written report of the performance testing results furnished to the EPA. Additional sampling may be required by TCEQ or EPA.
- C.** Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.
- D.** Performance tests shall be conducted under such conditions to ensure representative performance of the affected facility. The permittee shall make available to the EPA such records as may be necessary to determine the conditions of the performance tests.
- E.** The permittee shall provide the EPA at least 30 days' prior notice of any performance test, except as specified under other subparts, to afford the EPA the opportunity to have an observer present and/or to attend a pre-test meeting. If there is a delay in the original test date, the facility must provide at least 7 days prior notice of the rescheduled date of the performance test unless EPA approves an earlier rescheduled date due to unforeseen events, such as delays that are caused by weather.
- F.** The permittee shall provide, or cause to be provided, performance testing facilities as follows:
1. Sampling ports adequate for test methods applicable to this facility,
  2. Safe sampling platform(s),
  3. Safe access to sampling platform(s), and
  4. Utilities for sampling and testing equipment.
- G.** Emission testing for the combustion turbines, shall be performed every five years, plus or minus 6 months, from when the previous performance test was performed to verify continued performance at permitted emission limits.
- H.** If a CO<sub>2</sub> CEMS is installed, The permittee shall conduct its initial CO<sub>2</sub> CEMS relative accuracy test audit (RATA), in accordance with 40 CFR Part 60, Appendix F, Procedure 1, to evaluate compliance



of each turbine with the emission standards on a continuous basis, on or before the earlier of 90 unit days or 180 calendar days after the date the unit commences operation.

## **VII. Agency Notifications**

Permittee shall submit GHG permit applications, permit amendments, and other applicable permit information to:

Multimedia Planning and Permitting Division  
EPA Region 6  
1445 Ross Avenue (6 PD-R)  
Dallas, TX 75202  
Email: Group R6AirPermits@EPA.gov

Permittee shall submit a copy of all compliance and enforcement correspondence as required by this Approval to Construct to:

Compliance Assurance and Enforcement Division  
EPA Region 6  
1445 Ross Avenue (6EN)  
Dallas, TX 75202